CLAIMS

What is claimed is:

1.   A method performed by a subscriber platform for communication with other subscriber

5   platforms, the method comprising:

           determining a first tiling pattern, the tiling pattern associated with a respective set of

sector allocation patterns stored in the subscriber platform, each sector allocation pattern

associated with a respective set of channels;

           selecting a first sector allocation pattern from the set of sector allocation patterns

10   associated with the selected tiling pattern; and

           communicating with the other subscriber platforms in accordance with the set of channels

associated with selected sector allocation pattern.

2.   The method of claim 1 wherein the first tiling pattern is determined in accordance with a set

of tiling patterns stored in the subscriber platform.

15   3.   The method of claim 1 wherein:

           each respective channel has a respective direction;

           each sector allocation pattern has a geometric relationship among the directions of the

channels of the associated set of channels; and

           the method further comprises:

20   (1) determining a first received signal strength by receiving via a first channel of

the set associated with the selected sector allocation pattern;

                 (2) determining a second received signal strength by receiving via either the first

channel or via a second channel of the set associated with the selected sector allocation pattern;

and

25   (3) determining a reference direction of an antenna beam for at least one channel

of the set associated with the selected sector allocation pattern in accordance with the first

received signal strength, the second received signal strength, and the geometric relationship of

the selected sector allocation pattern; and

                 (4) communicating with the other subscriber platforms in accordance with the

30   selected allocation pattern oriented in accordance with the reference direction.

4.   The method of claim 1 wherein:

           each respective channel has a respective direction; and

           the method further comprises:

(1) determining a first received signal strength by receiving in a first direction;

(2) determining a second received signal strength by receiving in a second direction;

(3) determining a reference direction in accordance with the first received signal strength and the second received signal strength; and

(4) communicating with the other subscriber platforms in accordance with the selected allocation pattern oriented in accordance with the reference direction.

5.   The method of claim 1 wherein:

each respective channel has a respective direction; and

the method further comprises:

(1) determining a reference direction in accordance with a magnetic compass; and

(2) communicating with the other subscriber platforms in accordance with the selected allocation pattern oriented in accordance with the reference direction.

6.   The method of claim 1 wherein:

each respective channel has a respective direction; and

the method further comprises:

(1) determining a signal strength by receiving via a first channel of the set associated with the selected sector allocation pattern;

(2) providing a feedback signal in response to the signal strength;

(3) determining a reference direction in accordance with the feedback signal; and

(4) communicating with the other subscriber platforms in accordance with the selected allocation pattern oriented in accordance with the reference direction.

7.   The method of claim 6 wherein the feedback signal provides guidance for a user to manually orient the subscriber platform.

8.   The method of claim 6 further comprising indicating to a user, in accordance with the feedback signal, at least one of a received signal strength and a recommended change in orientation; so that a user's movement of the subscriber platform aids in orienting the selected sector allocation pattern.

9.   The method of claim 1 further comprising:

receiving indicia of a second tiling pattern via a channel of the first set of channels, the second tiling pattern being associated with a second set of sector allocation patterns stored in the subscriber platform; and

selecting a second sector allocation pattern from the second set of sector allocation

patterns, the second sector allocation pattern identifying a second set of channels; and

communicating with the other subscriber platforms in accordance with the second set of

channels.

5   10. The method of claim 9 further comprising discontinuing communication in accordance with

the first set of channels.

11. The method of claim 9 further comprising communicating via the first set of channels a

request for the indicia of the second tiling pattern.

12. The method of claim 1 further comprising:

.0   determining a first communication range via communication in a first sector of the

selected sector allocation pattern;

determining a second communication range via communication in a second sector of the

selected sector allocation pattern, the second communication range being greater than the first

communication range; and

l5   communicating with the other subscriber platforms using less than all sectors of the

plurality.

13. The method of claim 1 further comprising:

determining a first communication range via communication in a first sector of the

selected sector allocation pattern;

20   determining a second communication range via communication in a second sector of the

selected sector allocation pattern, the second communication range being greater than the first

communication range; and

communicating with the other subscriber platforms in accordance with the selected sector

allocation pattern and the first communication range.

25   14. A memory comprising indicia of instructions for performance of the method of claim 1 by a

processor.

15. A subscriber platform for communication with other subscriber platforms, the subscriber

platform comprising:

means for determining a first tiling pattern, the tiling pattern associated with a respective

30   set of sector allocation patterns stored in the subscriber platform, each sector allocation pattern

associated with a respective set of channels;

means for selecting a first sector allocation pattern from the set of sector allocation

patterns associated with the selected tiling pattern; and

means for communicating with the other subscriber platforms in accordance with the set of channels associated with selected sector allocation pattern.

16. A method performed by a first subscriber platform for communication with other subscriber platforms, the method comprising:

5   determining a tiling pattern;

determining a set of channels in accordance with the tiling pattern, a position in the tiling pattern, and a selected sector allocation pattern of a set of sector allocation patterns stored in the subscriber platform;

committing a plurality of channels of the set of channels for receiving;

.0   committing a plurality of channels of the set of channels for transmitting;

determining a routing table; and

communicating with the other subscriber platforms in accordance with the committed channels and the routing table.

17. The method of claim 16 wherein determining a tiling pattern comprises receiving indicia of a

l5 tiling pattern via a master/slave link.

18. The method of claim 16 wherein determining a tiling pattern comprises receiving indicia of a tiling pattern via a slave/slave link.

19. The method of claim 16 wherein determining a tiling pattern comprises receiving indicia of a tiling pattern via network control traffic.

20 20. The method of claim 16 wherein determining a tiling pattern comprises receiving indicia of a tiling pattern in response to sending a request to a master access point.

21. The method of claim 17, 18, 19, or 20 wherein determining a tiling pattern comprises recalling, in accordance with the indicia of tiling pattern, the tiling pattern from a store of tiling patterns stored in the subscriber platform.

25 22. The method of claim 17 or 18 wherein communicating on the respective link is accomplished using a sequence of ranges.

23. The method of claim 16 further comprising determining a direction for a channel of the set of channel in accordance with an orientation of the selected sector allocation pattern.

24. The method of claim 16 wherein indicia of the position is received from a neighboring

30 subscriber platform.

25. The method of claim 16 wherein determining the routing table comprises communicating with neighboring subscriber platforms.

26. A memory comprising indicia of instructions for performance of the method of claim 16 by a processor.

27. A subscriber platform for communicating with other subscriber platforms, the subscriber platform comprising:

5   means for determining a tiling pattern;

means for determining a set of channels in accordance with the tiling pattern, a position in the tiling pattern, and a selected sector allocation pattern of a set of sector allocation patterns stored in the subscriber platform;

means for committing a plurality of channels of the set of channels for receiving;

10   means for committing a plurality of channels of the set of channels for transmitting;

means for determining a routing table; and

means for communicating with the other subscriber platforms in accordance with the committed channels and the routing table.

28. A subscriber platform comprising:

15   a memory comprising indicia of a first set of tiling patterns and a second set of sector allocation patterns; and

means for communicating with other subscriber platforms in accordance with a tiling pattern of the first set and a sector allocation pattern of the second set; wherein:

each tiling pattern comprises at least four sector allocation patterns of the second set; and

20   each sector allocation pattern comprises a respective first pair of sectors for communication via a respective first communication channel, and a respective second pair of sectors for communication via a respective second communication channel, the respective channels being members of a third set of three communication channels.

29. The subscriber platform of claim 28 wherein:

25   the second set comprises at least six unique sector allocation patterns; and

the first set comprises:

(1) a first tiling pattern having the first sector allocation pattern and the fourth sector allocation pattern;

(2) a second tiling pattern having the second sector allocation pattern and the fifth

30   sector allocation pattern;

(3) a third tiling pattern having the third sector allocation pattern and the sixth sector allocation pattern;

(4) a fourth tiling pattern having the first sector allocation pattern, the second sector allocation pattern, the fourth sector allocation pattern, and the fifth sector allocation pattern;

(5) a fifth tiling pattern having the first sector allocation pattern, the third sector allocation pattern, the fourth sector allocation pattern, and the sixth sector allocation pattern; and

(6) a sixth tiling pattern having the second sector allocation pattern, the third second sector allocation pattern, the fifth sector allocation pattern, and the sixth sector allocation pattern.

30. A subscriber platform comprising:

a memory comprising indicia of a first set of tiling patterns and a second set of sector allocation patterns; and

means for communicating with other subscriber platforms in accordance with a tiling pattern of the first set and a sector allocation pattern of the second set; wherein:

each tiling pattern comprises three sector allocation patterns of the second set; and

each sector allocation pattern comprises a respective first pair of sectors for communication via a respective first communication channel and a respective second pair of sectors for communication via a respective second communication channel, the respective channels being members of a third set of three communication channels.

31. The subscriber platform of claim 30 wherein:

the second set comprises at least six unique sector allocation patterns; and

the first set comprises:

(1) a first, second, third, and fourth unique tiling patterns each having the first sector allocation pattern, the second sector allocation pattern, and the third sector allocation pattern; and

(2) a fifth, sixth, seventh, and eighth unique tiling patterns each having the fourth sector allocation pattern, the fifth sector allocation pattern, and the sixth sector allocation pattern.

32. A subscriber platform comprising:

a plurality of transceivers each operative on a respective channel to communicate in a respective sector;

a memory having indicia of a plurality of sector allocation patterns; and

a processor coupled to the memory and to the plurality of transceivers that selects a sector allocation pattern of the plurality, and that assigns a respective channel and sector to each transceiver in accordance with the selected sector allocation pattern.

33. A method performed by a subscriber platform for communication with other subscriber platforms, the method comprising:

    selecting a sector allocation pattern from a set of sector allocation patterns stored in a memory of the subscriber platform;

5   broadcasting a request for master access point response;

    receiving a first response from a first master access point indicating a first communication range;

    receiving a second response from a second master access point indicating a second communication range, shorter than the first communication range; and

10   communicating in a first plurality of sectors of the selected sector allocation pattern in accordance with the first range, and communicating in a second plurality of sectors of the selected sector allocation pattern in accordance with the second range.

34. The method of claim 33 wherein communicating comprises broadcasting in each sector of the selected sector allocation pattern a request for neighboring subscriber platforms.

15 35. The method of claim 34 wherein:

    a first response to the broadcast request comprises indicia of a first tiling pattern;

    a second response to the broadcast request comprises indicia of a second tiling pattern;

    the set of sector allocation patterns comprises indicia of intersticial sector allocation patterns; and

20   selecting a sector allocation pattern comprises selecting an intersticial sector allocation pattern.

36. The method of claim 35 wherein communication comprises initiating resignation of the second tiling pattern.

37. The method of claim 34 wherein:

25   a first response to the broadcast request comprises indicia of a first tiling pattern;

    a second response to the broadcast request comprises indicia of a second tiling pattern; and

    the processor prompts for a user of the subscriber platform to designate which of the first and second tiling patterns is to be used in further communication.

30 38. The method of claim 33 wherein the memory comprises indicia of a master access point, and communicating comprises servicing received requests for master access point response.

39. The method of claim 38 wherein requests for master access point response are serviced on a channel different from servicing slave/slave communication.

40. The method of claim 38 wherein requests for master access point response are serviced on a channel different from servicing slave/user communication.

41. A memory comprising indicia of instructions for performance of the method of claim 33 by a processor.

5   42. A subscriber platform for communicating with other subscriber platforms, the subscriber platform comprising:

       means for selecting a sector allocation pattern from a set of sector allocation patterns stored in a memory of the subscriber platform;

       means for broadcasting a request for master access point response;

10   means for receiving a first response from a first master access point indicating a first communication range;

       means for receiving a second response from a second master access point indicating a second communication range, shorter than the first communication range; and

       means for communicating in a first plurality of sectors of the selected sector allocation

15   pattern in accordance with the first range, and communicating in a second plurality of sectors of the selected sector allocation pattern in accordance with the second range.

43. A method performed by a subscriber platform for determining a routing table for routing slave/slave traffic, the method comprising:

       sending an own request to each neighbor subscriber platform requesting identification of

20   its multi-hop neighbors;

       servicing received requests for identification of own multi-hop neighbors by sending answers respectively comprising own identification, identification of all own multi-hop neighbors, and a respective hop count; and

       for each multi-hop neighbor indicated in any answer to the own request:

25   (1) selecting a path to the multi-hop neighbor in accordance with each hop count associated with the multi-hop neighbor; and

               (2) posting to the routing table an association consisting of the identification of the multi-hop neighbor and the identification of a first link of the selected path.

44. A method performed by a subscriber platform for determining a routing table for routing

30   slave/slave traffic, the method comprising:

       sending an own request to each neighbor subscriber platform requesting identification of its multi-hop neighbors;

servicing received requests for identification of own multi-hop neighbors by sending
answers respectively comprising own identification, identification of all own multi-hop
neighbors, and a respective path cost; and

for each multi-hop neighbor indicated in answers to the own request:

5   (1) determining a path to the multi-hop neighbor; and

(2) posting to the routing table an association consisting of the identification of
the multi-hop neighbor, the identification of a first link of the determined path, and the respective
path cost.

45. A memory comprising indicia of instructions for performance of the method of claim 44 by a
10   processor.

46. A subscriber platform for communicating with other subscriber platforms, the subscriber
platform comprising:

means for sending an own request to each neighbor subscriber platform requesting
identification of its multi-hop neighbors;

15   means for servicing received requests for identification of own multi-hop neighbors by
sending answers respectively comprising own identification, identification of all own multi-hop
neighbors, and a respective hop count; and

means, operative for each multi-hop neighbor indicated in any answer to the own request,
for selecting a path to the multi-hop neighbor in accordance with each hop count associated with
20   the multi-hop neighbor; and

means, operative for each multi-hop neighbor indicated in any answer to the own request,
for posting to the routing table an association consisting of the identification of the multi-hop
neighbor and the identification of a first link of the selected path.